

Appendix C

Response to Comments

California Regional Water Quality Control Board
San Francisco Bay Region

RESPONSE TO WRITTEN COMMENTS

On Tentative Order for
San Francisco Public Utilities Commission, Pulgas Dechloramination Facility
Redwood City, San Mateo County

The Regional Water Board received written comments from the City and County of San Francisco and Mr. Henry Lopez, a private citizen, on a tentative order distributed for public comment. This response to those comments summarizes the comment in *italics* (paraphrased for brevity) followed by a staff response. Revisions are shown with ~~strike through~~ for deletions and underline for additions. For the full content and context of each comment, refer to the comment letters.

CITY AND COUNTY OF SAN FRANCISCO (DISCHARGER)

Discharger Comment 1

The Discharger indicates that dechloramination of all flows up to 100 million gallons per day (MGD) is not always possible and that partial dechloramination is impossible. In followup phone and email correspondence, the Discharger clarified that, although the design capacity for dechloramination is 100 MGD, the system can only achieve consistent breakpoint chlorination (i.e., dechloramination) between 30 MGD and 80 MGD. Accurately administering chemical feeds at low flows is difficult, so the Discharger typically uses water from a balancing reservoir to ensure that flows exceed 30 MGD. Above 80 MGD, the system's ability to consistently achieve breakpoint chlorination depends on water chemistry. As a result, the dechloramination capacity ranges from 80 MGD to 120 MGD. When flows exceed the dechloramination capacity, no dechloramination is attempted.

Response to Discharger Comment 1

Discharge Prohibition III.A requires the Discharger to operate as described in Fact Sheet section II. We revised the Fact Sheet to reflect this new information and to require the Discharger to maximize dechloramination to the extent possible.

Based on this better understanding of the San Francisco Public Utilities Commission's Pulgas Dechloramination Facility (Facility) operations, we also revised the Monitoring and Reporting Program to remove the requirement for continuous or daily ammonia monitoring. During any particular day, the Facility's operations vary in terms of flow and, therefore, whether dechloramination or dechlorination-only is taking place. Continuous or daily ammonia data are of little use if not delineated for the two operating modes. Consequently, we revised the tentative order to require only two samples each quarter, one for each operational mode.

Furthermore, to better understand the extent to which the Discharger operates in the two modes, we revised the Monitoring and Reporting Program to require the Discharger to report flow data by operating mode, in addition to reporting aggregate flows. We also revised the Monitoring and Reporting Program to require the Discharger to explain why dechloramination is infeasible if it

operates in the dechlorination-only mode when flows are between 80 MGD and 120 MGD. The tentative order requires the Discharger to maximize dechloramination, and these explanations will help us understand the circumstances affecting its decisions.

We revised Fact Sheet section II.A.2 (first paragraph) as follows:

Source Water. The water entering the Facility comes from the San Francisco Public Utilities Commission's Hetch Hetchy Reservoir and is supplemented by local source waters from Calaveras Reservoir and San Antonio Reservoir located in the East Bay. The volume of the flow entering the Facility fluctuates depending on the time of year, weather conditions, and customer demands. The fluctuation could be substantial and could occur suddenly (from 0 to 60 million gallons per day (MGD) within minutes tens of seconds). From November 2012 through November 2013, the Facility's average daily flow ranged from 0 MGD to 120 MGD.

We revised Fact Sheet section II.A.3 as follows (these changes include changes in response to Discharger Comment 4):

Treatment Processes. The Facility, which is unstaffed, uses break point chlorination to remove chloramine from the source water. The treatment is carried out in a 10-foot diameter 1,913-foot-long plug-flow contactor pipe. First, carbon dioxide is introduced to the inlet box to lower the pH. Sufficient chlorine, in the form of sodium hypochlorite, is then added to "breakpoint" to convert chloramine to chlorine and ammonia. This process converts the ammonia, and the latter is converted to nitrogen gas, which is off-gassed (ammonia removal). Next, at the outlet box, sodium bisulfite is added to quench the leftover chlorine by reducing free chlorine to chloride (chlorine removal). The water then enters a 650-foot open-concrete channel where additional detention time allows dechlorination to be is completed prior to discharge. The dechloramination process requires the addition of three chemicals, each capable of affecting the pH (carbon dioxide and sodium bisulfite lower the pH and sodium hypochlorite raises the pH). For flows low in alkalinity (e.g., Hetch Hetchy source water), such pH changes could be pronounced and swift, making the control of chemical dose critical.

The Discharger dechloraminates as much water as possible. The design capacity for dechloramination is about 100 MGD based on the required contact time for breakpoint chlorination. , and + The Facility operates in full dechloramination mode between 30 MGD and 80 MGD. To ensure accurate chemical feeds, the Discharger typically uses water from a balancing reservoir to ensure that flows exceed 30 MGD. Above 80 MGD, the Discharger operates in dechloramination mode, if feasible, based on pH and other characteristics of the source water, up to a maximum of 120 MGD. Above this range, dechloramination does not occur. unless flows exceed 100 MGD. Due to flow fluctuations, the Facility may occasionally experience flows greater than 100 MGD. In such circumstances, ammonia removal could be reduced. Full dechlorination would continue. The dechlorination design capacity is the same as the contactor pipe's hydraulic capacity (about 200 MGD). From November 2012 through November 2013, the median daily average flow was 20 MGD, with a range of 0 to 120 MGD.

To date, the Facility has never experienced flows exceeding 200 MGD. If that were to occur, excess water would flow over an overflow weir at the headworks to the discharge channel. It would be dechlorinated with sodium bisulfite at an auxiliary dosing point under the Pulgas Temple. The dechlorinated, but not dechloraminated, flow would then be

blended with the rest of the treated water before discharge. Operations in this dechlorination-only mode may occur during very high flows or when the system requires repairs or maintenance.

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We revised Fact Sheet section IV.D.2.c.iii as follows:

The Discharger provides best practicable treatment or control for ammonia as antidegradation policies mandate. The Discharger dechloraminates up to at least 80 MGD, the first 100 MGD of its flows and provides partial dechloramination for flows between 100 MGD and 200 MGD. Moreover, by By removing as much ammonia as possible, the Discharger ensures that pollution or nuisance conditions do not occur.

We revised Monitoring Reporting Program Table E-2 as follows (these changes include revisions made in response to Discharger Comment 2 [Total Residual Chlorine]):

Table E-2. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
⋮	⋮	⋮	⋮
Total Residual Chlorine ^[3]	mg/L	Continuous	Continuous
Total Ammonia ^[4]	mg/L <u>as nitrogen</u>	Continuous or Grab	Continuous or 1/Day <u>2/Quarter</u>
Chlorodibromomethane	μg/L	Grab	1/Quarter
⋮	⋮	⋮	⋮

⋮

Sampling Frequency:

Continuous/D = measured continuously, and recorded and reported daily

~~1/Day~~ = once per day

1/Quarter = once per quarter

~~2/Quarter~~ = twice per quarter

Footnotes:

^[1] Flow shall be monitored continuously and the following information shall be reported in quarterly self-monitoring reports:

- Daily average flow (MGD)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)
- Maximum and minimum daily average flow rates (MGD)

With these data, the Discharger shall report the following information for each operational mode (dechloramination and dechlorination-only):

- Daily average flow (MGD)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)
- Maximum and minimum daily average flow rates (MGD)

When operating in dechlorination-only mode and flows are between 80 MGD and 120 MGD, the Discharger shall explain in its self-monitoring reports why dechloramination was infeasible.

^[2] The minimum and maximum pH values for each day shall be reported in self-monitoring reports.

^[3] The maximum residual chlorine concentration and four-day rolling average for each day shall be reported in self-monitoring reports. When calculating four-day rolling averages, periods of no discharge shall be assigned a concentration of 0 mg/L. The Reporting Level (RL) for residual chlorine shall be no higher than 0.05 mg/L.

^[4] The Discharger shall collect one sample when operating in dechloramination mode and one when operating in dechlorination-only mode each quarter, report the average total ammonia concentration for each day and indicate in self-monitoring reports whether the data represent full dechloramination (flows up to 100 MGD), partial dechloramination (flows from 100 MGD to 200 MGD), or dechlorination only (flows above 200 MGD or during repairs or maintenance). After one year, the monitoring frequency shall be once per quarter.

We revised Monitoring Reporting Program Table E-5 as follows:

Table E-5. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
Continuous	Permit effective date	All
⋮	⋮	⋮
1/Quarter 2/Quarter	First day of calendar month following permit effective date or on permit effective date if on first day of month	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31

Discharger Comment 2 (pH)

The Discharger seeks to confirm the meaning of Table 4, footnotes 1 and 2. Specifically, it seeks to confirm that an exceedance of the effluent pH limit listed in Table 4 will result in a violation only if, through continuous monitoring of the receiving water, the discharge also causes the natural background pH to be depressed below 6.5 or raised above 8.5, or if the background pH is outside this range, alters the receiving water pH from normal ambient pH by more than 0.5 standard units.

Response to Discharger Comment 2 (pH)

We agree. No revision is necessary.

Discharger Comment 2 (Total Residual Chlorine)

The Discharger seeks to clarify how it should calculate four-day rolling average residual chlorine concentrations. Specifically, it proposes using zeros for periods when no discharge occurs.

Response to Discharger Comment 2 (Total Residual Chlorine)

We agree. Because there may be significant portions of four-day periods during which no discharge takes place, it does not make sense to ignore the lack of discharge when calculating four-day averages. We revised Table 4 as follows (also see revisions to Monitoring and Reporting Program Table E-2, footnote 3, in Response to Discharger Comment 1):

Table 4. Pollutant Effluent Limitations

Parameter	Units	Effluent Limitations					
		Average Monthly	Average Weekly	Maximum Daily	4-Day Average	Instantaneous Minimum	Instantaneous Maximum
pH ^{[1] [2]}	s.u.	---	---	---	---	6.5	8.5
Total Residual Chlorine ^[3]	mg/L	---	---	---	0.011 ^[4]	---	0.21
Chlorodibromo-methane	µg/L	4.5	---	9.0	---	---	---
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮

Footnotes:

^[3] The Discharger may elect to use a continuous on-line monitoring system for measuring or determining that residual sodium bisulfite (or other dechlorinating agent) is present. This monitoring system may be used to prove that anomalous residual chlorine exceedances measured are false positives and are not violations of this total residual chlorine limit because it is chemically improbable to have chlorine present in the presence of dechlorinating agent.

^[4] The 4-day average is a moving arithmetic mean, beginning and ending at midnight.

Discharger Comment 3 (Monitoring; Sampling and Analysis)

The Discharger seeks to confirm that its on-line analyzers and receiving water sonde need not be certified by the California Department of Public Health's Environmental Laboratory Accreditation Program (ELAP). It asserts that the requirement to use certified laboratories applies only when using offsite laboratories.

Response to Discharger Comment 3 (Monitoring; Sampling and Analysis)

We disagree. All monitoring described in the tentative order must be ELAP-certified. The California Department of Public Health can provide certification for onsite monitoring, including receiving water monitoring. The Discharger may review the Department's web site (<http://www.cdph.ca.gov/programs/ELAP/Pages/ELAPContacts.aspx>) for information regarding how to arrange for ELAP certification.

Discharger Comment 3 (Attachment G)

The Discharger requests clarification regarding which Attachment G sections apply and which are inapplicable. It asserts that the provisions below are directed at publicly owned treatment works and are therefore inapplicable:

- I.C.1 Contingency Plan*
- I.C.2 Spill Prevention Plan*
- I.D.2 Wastewater Facilities Status Report*
- I.D.3 Proper Supervision and Operation of Publicly Owned Treatment Works*
- I.I.2 Collection, Treatment, Storage, and Disposal Systems*
- I.J.1 – I.J.4 Storm Water*
- I.K. Biosolids Management*
- III.A.1 Use of Certified Laboratories*
- III.A.3.a.3 Grab Sampling*
- III.A.3.c Storm Water Monitoring*
- III.A.3.d.2 Receiving Water Sampling*
- III.B Biosolids Monitoring*
- III.C Standard Observations*
- IV.B.3 Wastewater Treatment Process Solids*
- IV.B.4 Disinfection Process*
- IV.B.5 Treatment Process Bypasses*
- IV.B.6 Treatment Facility Overflows*

Response to Discharger Comment 3 (Attachment G)

We agree that the following Attachment G provisions are inapplicable:

- I.D.2 Wastewater Facilities Status Report*
- I.D.3 Proper Supervision and Operation of Publicly Owned Treatment Works*
- I.I.2 Collection, Treatment, Storage, and Disposal Systems*
- I.J.1 – I.J.4 Storm Water*
- I.K Biosolids Management*
- III.A.3.c Storm Water Monitoring*
- III.A.3.d.2 Receiving Water Sampling*
- III.B Biosolids Monitoring*
- III.C Standard Observations*
- IV.B.3 Wastewater Treatment Process Solids*
- IV.B.4 Disinfection Process*

The following Attachment G provisions apply because they are not necessarily limited to publicly owned treatment works:

- I.C.1 Contingency Plan (see modification below)
- I.C.2 Spill Prevention Plan
- III.A.1 Use of Certified Laboratories
- III.A.3.a.3 Grab Sampling
- IV.B.5 Treatment Process Bypass
- IV.B.6 Treatment Facility Overflows

We revised Provision VI.A.2 as follows:

The Discharger shall comply with all applicable provisions of the “Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits” (Attachment G). The following Attachment G provisions do not apply: I.D.2, I.D.3, I.I.2, I.J, I.K, III.A.3.c, III.A.3.d.2, III.B, III.C, IV.B.3, and IV.B.4.

We revised Monitoring and Reporting Program section VII to provide further clarification by adding a new section VII.A as follows (only changes to Attachment G are shown, and subsequent sections are re-lettered):

MODIFICATIONS TO ATTACHMENT G

This MRP modifies Attachment G as indicated below.

A. Attachment G sections I.C.1 is revised as follows.

1. Contingency Plan - The Discharger shall maintain a Contingency Plan as originally required by Regional Water Board Resolution 74-10 and as prudent in accordance with current municipal facility emergency planning. ... The Contingency Plan shall, at a minimum, contain the provisions of a. through g. below.
 - a. Provision of personnel for continued operation and maintenance of ~~sewerage~~ facilities during employee strikes or strikes against contractors providing services.
 - b. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operations of ~~sewerage~~ facilities.
 - c. Provisions of emergency standby power.
 - d. Protection against vandalism.
 - e. Expedient action to repair failures of, or damage to, equipment ~~and sewer lines~~.
 - f. Report of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges.

- g. Programs for maintenance, replacement, and surveillance of physical condition of equipment; and facilities, ~~and sewer lines.~~

We revised Monitoring and Reporting Program section VII.B (now VII.C) as follows:

Attachment G sections V.C.1.f and V.C.1.g are revised as follows, and section V.C.1.h (Reporting data in electronic format) is deleted.

- f. Annual self-monitoring report requirements

By the date specified in the MRP, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

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- 7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, and the Spill Prevention Plan, ~~and Wastewater Facilities Status Report~~ so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

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Discharger Comment 4

The Discharger suggests factual and typographical changes.

Response to SFPUC Comment 4

We revised the tentative order in several places (see Response to Discharger Comment 1). We revised Fact Sheet section IV.C.3.a as follows:

Methodology. SIP section 1.3 sets forth the methodology ~~mythology~~ used for this Order for assessing whether a pollutant has reasonable potential to exceed a water quality objective. ...

We did not revise Fact Sheet section II.B because the name of the discharge point is correctly stated as “Discharge Point No. 001.” There is a monitoring location named “Monitoring Location EFF-001,” defined as “any point following full treatment where all effluent from the Facility is present.” Discharge Point No. 001, on the other hand, is a fixed location with specific coordinates stated in the tentative order.

MR. HENRY LOPEZ

Lopez Comment 1

Mr. Lopez asserts that sumps at the facility may contain hazardous waste and that the Discharger has in the past disposed of this hazardous waste on land. He requests that the tentative order prohibit such practices.

Response to Lopez Comment 1

We agree. Discharge Prohibitions III.A and III.B, as already presented in the tentative order, prohibit discharges other than those described in Fact Sheet section II, and the discharges described there do not include hazardous wastes.

Lopez Comment 2

Mr. Lopez expresses concern that process chemicals stored onsite, such as sodium hypochlorite and sodium bisulfite, could react in the event of a catastrophe and form an acid cloud. He believes the facility should be equipped with air emissions scrubbers.

Response to Lopez Comment 2

The tentative order addresses only water discharges and water quality pursuant to the Clean Water Act, not hazardous materials and waste storage. The San Mateo County Health System, Environmental Health Division, is the certified unified program agency (CUPA) responsible for overseeing hazardous materials and waste onsite. Nevertheless, Attachment G sections I.D.1 and I.D.2 (as modified by Monitoring and Reporting Program section VII.C as shown in Response to Discharger Comment 3 [Attachment G]) require the preparation of a Contingency Plan and Spill Prevention Plan.

Lopez Comment 3

Mr. Lopez is concerned that the tentative order contains outdated maps and diagrams. He requests a study to generate updated maps and diagrams that indicate the locations of sumps and scrubbers.

Response to Lopez Comment 3

We disagree. The maps and diagrams in Attachments B and C include aspects of the Facility relevant to the authorized discharge. They are sufficient for purposes of the tentative order.

STAFF-INITIATED REVISIONS

In addition to making minor editorial and formatting changes, we revised Table 3 to postpone the effective date and expiration date as follows:

Table 3. Administrative Information

This Order was adopted on:	DATE
This Order shall become effective on:	March 1 <u>April 1</u> , 2014
This Order shall expire on:	February 28 <u>March 31</u> , 2019
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with California Code of Regulations, title 23, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	June 3 <u>July 3</u> , 2018
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region, have classified this discharge as follows:	Minor

We revised Monitoring Reporting Program Table E-1 to correct the locations of Monitoring Locations EFF-001 and RSW-001 as follows:

Table E-1. Monitoring Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description ^[1]
Effluent	EFF-001	At a point following full treatment where all effluent from the Facility is present (Latitude <u>37.48250° N</u> 2610° N , Longitude <u>-122.32083° W</u> 19680° W ^[1])
Receiving Water	RSW-001	At a point within one foot of the water surface at the edge of the mixing zone shown in Attachment B (Latitude <u>37.48938° N</u> 37.483333° N , Longitude <u>-122.32842° W</u> -122.316667° W ^[1])